CLAIMS

Please rewrite claims 30-36, 38, 39, 43, 44, 52, 54, 55, 60, 66-71, 74-79, and 82-94 as follows:

30. A multicarrier-signal generator including:

a pulse generator capable of generating a plurality of periodic pulses, the periodic pulses having at least one pulse period and a frequency spectrum comprising a plurality of carrier signals having equally spaced frequencies, and

a frequency selector coupled to the pulse generator, the frequency selector capable of selecting the plurality of carrier signals to be within at least one predetermined frequency band.

31. A multicarrier-signal generator including:

a pulse generator capable of generating a plurality of periodic pulses, the periodic pulses having at least one pulse period and a frequency spectrum comprising a plurality of carrier signals having equally spaced frequencies with a frequency spacing that is a function of the at least one pulse period,

a modulator coupled to the pulse generator, the modulator adapted to modulate at least one information signal onto at least one of the periodic pulses, and

a frequency selector coupled to at least one of the modulator and the pulse generator, the frequency selector capable of selecting the plurality of carrier signals to be within at least one predetermined frequency band.

32. A method of generating a multicarrier signal including:

providing for generating a plurality of information-modulated periodic pulses including generating a plurality of unmodulated pulses having at least one pulse period and a frequency spectrum comprising a plurality of equally spaced carrier signals, the information-modulated periodic pulses having at least one of a set of signal characteristics that is a function of at least one information signal, the set of signal characteristics including amplitude, phase, time, and frequency, and

providing for selecting the plurality of carrier signals to be within at least one predetermined frequency band.

33. A method of generating a multicarrier signal including:

providing for generating a plurality of periodic pulses wherein the periodic pulses have at least one pulse period and a frequency spectrum comprising a plurality of carrier signals having equally spaced frequencies, and

providing for modulating the periodic pulses with at least one information signal to generate a plurality of information-modulated periodic pulses, the information-modulated periodic pulses having at least one of a set of signal characteristics that is a function of the information signal, the set of signal characteristics including amplitude, phase, and frequency.

34. The multicarrier-signal generator recited in claim 30 wherein the pulse generator includes a modulator adapted to modulate at least one set of signals, including the plurality of carrier signals and the plurality of periodic pulses, with at least one information signal.

35. The multicarrier-signal generator recited in claim 30 wherein the pulse generator includes a modulator adapted to modulate the plurality of periodic pulses with at least one information signal.

36. The multicarrier-signal generator recited in claim 30 wherein the pulse generator includes a modulator adapted to modulate the carrier signals with information symbols having durations of up to the pulse period of the periodic pulses.

38. The multicarrier-signal generator recited in claim 30 wherein the pulse generator includes a coder and a modulator, the coder adapted to encode information signals, and the modulator adapted to modulate at least one coded information signal onto at least one of a set of signals, including the plurality of periodic pulses and the plurality of carrier signals.

39. The multicarrier-signal generator recited in claim 30 wherein the pulse generator includes a carrier generator and a combiner, the carrier generator adapted to generate

the plurality of carrier signals and the combiner adapted to combine the plurality of carrier signals to generate the periodic pulses.

43. The multicarrier-signal generator recited in claim 42 wherein the at least one of the pulse generator and the frequency selector is adapted to provide the predetermined frequency-versus-amplitude window belonging to any of a set of tapered window functions, including Hanning, Hamming, Gaussian, triangular, Bartlett, Kaiser, and Chebyshev functions.

44. The multicarrier-signal generator recited in claim 30 wherein the pulse generator is adapted to provide an identical time-dependent frequency variation to each of the carrier signals.

52. The multicarrier-signal generator recited in claim 31 wherein the modulator is adapted to modulate the carrier signals with information symbols having durations of up to the pulse period of the periodic pulses.

54. The multicarrier-signal generator recited in claim 31 further including a coder adapted to encode information signals prior to modulation to generate a plurality of coded information signals, the modulator being adapted to modulate the coded information signals onto at least one of a set of signals, including the plurality of periodic pulses and the plurality of carrier signals.

55. The multicarrier-signal generator recited in claim 31 wherein the pulse generator includes a carrier generator adapted to generate the plurality of carrier signals, and a combiner adapted to combine the plurality of carrier signals to generate the periodic pulses.

60. The multicarrier-signal generator recited in claim 31 wherein the pulse generator is adapted to provide an identical time-dependent frequency variation to each of the carrier signals.

66. The method of generating a multicarrier signal recited in claim 32 wherein providing for generating the plurality of information-modulated periodic pulses includes providing for modulating each of the carrier signals with the at least one information signal.

67. The method of generating a multicarrier signal recited in claim 32 wherein providing for generating the plurality of information-modulated periodic pulses includes

providing for modulating one or more superpositions of the carrier signals with the at least one information signal.

68. The method of generating a multicarrier signal recited in claim 32 wherein providing for generating the plurality of information-modulated periodic pulses includes providing for modulating the carrier signals with information symbols having durations of up to the pulse period of the periodic pulses.

69. The method of generating a multicarrier signal recited in claim 32 wherein providing for generating the plurality of information-modulated periodic pulses includes providing for performing at least one of a set of modulation types, including amplitude modulation, phase modulation, time-offset modulation, and frequency modulation.

70. The method of generating a multicarrier signal recited in claim 32 further including providing for encoding information signals to generate a plurality of coded information signals and providing for modulating the coded information signals onto at least one of a set of signals, including the plurality of periodic pulses and the plurality of carrier signals.

71. The method of generating a multicarrier signal recited in claim 32 wherein providing for generating a plurality of information-modulated periodic pulses includes providing for generating the plurality of carrier signals, and providing for combining the plurality of carrier signals to generate the periodic pulses.

74. The method of generating a multicarrier signal recited in claim 32 wherein at least one of providing for generating the plurality of information-modulated periodic pulses and providing for selecting the plurality of the carrier signals includes providing for applying a predetermined frequency-domain window to the carrier signals.

75. The method of generating a multicarrier signal recited in claim 32 wherein at least one of providing for generating the plurality of information-modulated periodic pulses and providing for selecting the plurality of the carrier signals includes providing for applying a predetermined frequency-domain window to the carrier signals, the frequency-domain window belonging to any of a set of tapered window

functions, including Hanning, Hamming, Gaussian, triangular, Bartlett, Kaiser, and Chebyshev functions.

76. The method of generating a multicarrier signal recited in claim 32 wherein providing for generating the plurality of information-modulated periodic pulses includes providing for applying an identical time-dependent frequency variation to each of the carrier signals.

77. The method of generating a multicarrier signal recited in claim 32 wherein providing for generating the plurality of information-modulated periodic pulses includes providing for performing multiple access with respect to at least one of a set of multiple-access protocols, the set including frequency division multiple access, time division multiple access, and code division multiple access.

78. The method of generating a multicarrier signal recited in claim 32 wherein at least one of providing for generating the plurality of information-modulated periodic pulses and providing for selecting the plurality of the carrier signals includes providing for applying at least one set of time offsets to the carrier signals.

79. The method of generating a multicarrier signal recited in claim 32 wherein providing for selecting the plurality of the carrier signals includes providing for selecting a predetermined set of carrier frequencies allocated to a particular user in a communication system.

82. The method of generating a multicarrier signal recited in claim 33 wherein providing for modulating the periodic pulses with at least one information signal includes providing for modulating each of the carrier signals with the at least one information signal.

83. The method of generating a multicarrier signal recited in claim 33 providing for modulating the periodic pulses with at least one information signal includes providing for modulating one or more superpositions of the carrier signals with the at least one information signal.

84. The method of generating a multicarrier signal recited in claim 33 wherein providing for modulating the periodic pulses with at least one information signal includes providing for modulating the carrier signals with information symbols having durations of up to the pulse period of the periodic pulses.

85. The method of generating a multicarrier signal recited in claim 33 providing for modulating the periodic pulses with at least one information signal includes providing for performing at least one of a set of modulation types, including amplitude modulation, phase modulation, time-offset modulation, and frequency modulation.

86. The method of generating a multicarrier signal recited in claim 33 further including providing for encoding the at least one information signal to generate a plurality of coded information signals prior to providing for modulating the coded information signals onto at least one of a set of signals, including the plurality of periodic pulses and the plurality of carrier signals.

87. The method of generating a multicarrier signal recited in claim 33 wherein providing for generating the plurality of periodic pulses includes providing for generating the plurality of carrier signals, and providing for combining the plurality of carrier signals to generate the periodic pulses.

88. The method of generating a multicarrier signal recited in claim 33 wherein providing for generating the plurality of periodic pulses includes providing for generating pulses having carrier signals that include at least one of a set of frequencies, including intermediate frequencies, radio frequencies, and optical frequencies.

89. The method of generating a multicarrier signal recited in claim 33 wherein providing for generating the plurality of periodic pulses includes providing for generating a continuous train of pulses.

90. The method of generating a multicarrier signal recited in claim 33 wherein at least one of providing for generating the plurality of periodic pulses and providing for modulating the periodic pulses includes providing for applying a predetermined frequency-domain window to the carrier signals.

91. The method of generating a multicarrier signal recited in claim 33 wherein at least one of providing for generating the plurality of periodic pulses and providing for modulating the periodic pulses includes providing for applying a predetermined frequency-domain window to the carrier signals, the frequency-domain window belonging to any of a set of tapered window functions, including Hanning, Hamming, Gaussian, triangular, Bartlett, Kaiser, and Chebyshev functions.

92. The method of generating a multicarrier signal recited in claim 33 wherein providing for generating the plurality of periodic pulses includes providing for applying an identical time-dependent frequency variation to each of the carrier signals.

93. The method of generating a multicarrier signal recited in claim 33 wherein providing for generating the plurality of periodic pulses includes providing for performing multiple access with respect to at least one of a set of multiple-access protocols, the set including frequency division multiple access, time division multiple access, and code division multiple access.

94. The method of generating a multicarrier signal recited in claim 33 wherein at least one of providing for generating the plurality of information-modulated periodic pulses and providing for modulating the periodic pulses includes providing for applying at least one set of time offsets to the carrier signals.